

CLAIMS

1. (Currently amended) Diagnostic procedure for identification of a disorder of pancreatic function in a patient comprising determining the content of one or more pancreatic elastases (iso-enzymes) elastase iso-enzyme in the patient's serum, secretions or excretions by means of an immunochemical system using ~~antibodies selected from the group consisting of~~ polyclonal antibodies raised against ~~any of the following synthetic peptides~~ one or more synthetic peptide selected from the group consisting of

NH₂-A-V-K-E-G-P-E-Q-V-I-P-I-N-COOH (SEQ ID NO: 2)

NH₂-Y-T-N-G-P-L-P-D-K-L-Q-Q-A-R-COOH (SEQ ID NO: 3)

NH₂-R-S-G-C-N-G-D-S-G-G-P-L-N-COOH (SEQ ID NO: 5)

NH₂-G-P-L-N-C-P-T-E-D-G-G-W-Q-COOH (SEQ ID NO: 4)

~~NH₂-G-T-E-A-G-R-N-S-W-P-S-Q-I-COOH (SEQ ID NO: 6)~~

~~NH₂-H-N-L-S-Q-N-D-G-T-E-Q-Y-V-COOH (SEQ ID NO: 7)~~

NH₂-W-G-K-T-K-T-N-G-Q-L-A-COOH (SEQ ID NO: 8)

~~NH₂-V-S-S-R-G-C-N-V-S-R-K-P-T-COOH (SEQ ID NO: 9)~~

~~NH₂-G-G-E-E-A-R-P-N-S-W-P-W-Q-COOH (SEQ ID NO: 10)~~

~~NH₂-S-S-S-R-T-Y-R-V-G-L-G-R-H-N-COOH (SEQ ID NO: 11)~~

~~NH₂-K-D-W-N-S-N-Q-I-S-K-G-N-D-COOH (SEQ ID NO: 12)~~

~~NH₂-G-P-L-N-C-Q-A-S-D-G-R-W-COOH (SEQ ID NO: 13)~~

~~NH₂-G-A-L-P-D-D-L-K-Q-G-R-L-COOH (SEQ ID NO: 14)~~

~~NH₂-S-L-Q-Y-E-K-S-G-S-F-Y-COOH (SEQ ID NO: 15)~~

~~NH₂-F-G-C-N-T-R-R-K-P-T-V-F-T-COOH (SEQ ID NO: 16)~~

~~and which~~ wherein said antibodies cannot recognize an elastase fragment with the amino-acid

sequence Thr-Met-ValAla-Gly-Gly-Asp-Ile-Arg (SEQ ID NO: 1),

wherein polyclonal antibodies that react specifically with human elastase in stool or body fluids are

induced by immunization of a vertebrate animal that comprises administering synthetic peptides A-

V-K-E-G-P-E-Q-V-I-P-I-N (SEQ ID NO: 2),

Y-T-N-G-P-L-P-D-K-L-Q-Q-A-R (SEQ ID NO: 3),

R-S-G-C-N-G-D-S-G-G-P-L-N (SEQ ID NO: 5) and

G-P-L-N-C-P-T-E-D-G-G-W-Q (SEQ ID NO: 4) or immunogenic portions of these peptides to a vertebrate animal, inducing the formation of antibodies, and separating and purifying the formed antibodies.

2. Cancelled

3. (Currently amended) The procedure according to claim 1, comprising obtaining antibodies by
a) immunizing ~~a~~ an animal selected from ~~rabbits, guinea pigs, goats, chickens and fish~~ rabbit, guinea pig, goat, chicken and fish with ~~antigens selected from the group consisting of complete elastases 1, 2 and 3 and of their subunits~~ one or more of the synthetic peptides of claim 1, wherein the amino acid sequence Thr-Met-Val-Ala-Gly-Gly-Asp-Ile-Arg (SEQ ID NO: 1) is not used as an elastase fragment or as an immunologically effective partial sequence thereof;
b) separating and purifying the formed antibodies, thereby obtaining ~~monoclonal and/or polyclonal~~ antibodies that react specifically with ~~human elastase 1, 2 and 3~~ one or more elastase iso-enzyme in stool or body fluids.

4.- 5. Cancelled

6. (Currently amended) Immunological test kits for a diagnosis and progress check of diseases of the pancreas of a patient using stool or body fluids containing ~~one or more of monoclonal or polyclonal~~ antibodies, where the antibodies are single specific antibodies or cross-reactive antibodies raised against one or more synthetic peptide selected from the group consisting of

NH₂-A-V-K-E-G-P-E-Q-V-I-P-I-N-COOH (SEQ ID NO: 2)

NH₂-Y-T-N-G-P-L-P-D-K-L-Q-Q-A-R-COOH (SEQ ID NO: 3)

NH₂-R-S-G-C-N-G-D-S-G-G-P-L-N-COOH (SEQ ID NO: 5)

NH₂-G-P-L-N-C-P-T-E-D-G-G-W-Q-COOH (SEQ ID NO: 4)

NH₂-G-T-E-A-G-R-N-S-W-P-S-Q-I-COOH (SEQ ID NO: 6)

NH₂-H-N-L-S-Q-N-D-G-T-E-Q-Y-V-COOH (SEQ ID NO: 7)

NH₂-W-G-K-T-K-T-N-G-Q-L-A-COOH (SEQ ID NO: 8)

NH₂-V-S-S-R-G-C-N-V-S-R-K-P-T-COOH (SEQ ID NO: 9)

NH₂-G-G-E-E-A-R-P-N-S-W-P-W-Q-COOH (SEQ ID NO: 10)

~~NH₂-S-S-S-R-T-Y-R-V-G-L-G-R-H-N-COOH (SEQ ID NO: 11)~~

~~NH₂-K-D-W-N-S-N-Q-I-S-K-G-N-D-COOH (SEQ ID NO: 12)~~

~~NH₂-G-P-L-N-C-Q-A-S-D-G-R-W-COOH (SEQ ID NO: 13)~~

~~NH₂-G-A-L-P-D-D-L-K-Q-G-R-L-COOH (SEQ ID NO: 14)~~

~~NH₂-S-L-Q-Y-E-K-S-G-S-F-Y-COOH (SEQ ID NO: 15)~~

~~NH₂-F-G-C-N-T-R-R-K-P-T-V-F-T-COOH (SEQ ID NO: 16)~~

that can recognize an elastase iso-enzymes ~~1, 2 and 3~~ but not the amino-acid sequence Thr-Met-Val-Ala-Gly-Gly-Asp-Ile-Arg (SEQ ID NO: 1).

7. (Cancelled)

8. (Currently amended) The procedure according to ~~claim 7~~ claim 1, comprising coupling peptides with carrier substances before administration to the vertebrate.

9. (Currently amended) The procedure according to ~~claim 7~~ claim 1, wherein the vertebrate is a chicken.

10. (Cancelled)

11. (Cancelled)

12. (Previously Presented) Synthetic peptide A-V-K-E-G-P-E-Q-VI-P-I-N (SEQ ID NO: 2).

13. (Previously Presented) Synthetic peptide Y-T-N-G-P-L-P-D-KL-Q-Q-A-R (SEQ ID NO: 3).

14. (Previously Presented) Synthetic peptide R-S-G-C-N-G-D-S-GG-P-L-N (SEQ ID NO: 5).

15. (Previously Presented) Synthetic peptide G-P-L-N-C-P-T-E-DG-G-W-Q (SEQ ID NO: 4).

16. Cancelled

17. (Currently amended) Immunological test kits for diagnosis and progress check of diseases of ~~a~~ the pancreas and of mucoviscidosis using stool or body fluids comprising ~~antibodies~~ one or more

antibody induced by ~~administering to an patient~~ synthetic peptides selected from the group consisting of:

NH₂-A-V-K-E-G-P-E-Q-V-I-P-I-N-COOH (SEQ ID NO: 2)

NH₂-Y-T-N-G-P-L-P-D-K-L-Q-Q-A-R-COOH (SEQ ID NO: 3)

NH₂-R-S-G-C-N-G-D-S-G-G-P-L-N-COOH (SEQ ID NO: 5)

NH₂-G-P-L-N-C-P-T-E-D-G-G-W-Q-COOH (SEQ ID NO: 4)

~~NH₂-G-T-E-A-G-R-N-S-W-P-S-Q-I-COOH (SEQ ID NO: 6)~~

~~NH₂-H-N-L-S-Q-N-D-G-T-E-Q-Y-V-COOH (SEQ ID NO: 7)~~

~~NH₂-W-G-K-T-K-T-N-G-Q-L-A-COOH (SEQ ID NO: 8)~~

~~NH₂-V-S-S-R-G-C-N-V-S-R-K-P-T-COOH (SEQ ID NO: 9)~~

~~NH₂-G-G-E-E-A-R-P-N-S-W-P-W-Q-COOH (SEQ ID NO: 10)~~

~~NH₂-S-S-S-R-T-Y-R-V-G-L-G-R-H-N-COOH (SEQ ID NO: 11)~~

~~NH₂-K-D-W-N-S-N-Q-I-S-K-G-N-D-COOH (SEQ ID NO: 12)~~

~~NH₂-G-P-L-N-C-Q-A-S-D-G-R-W-COOH (SEQ ID NO: 13)~~

~~NH₂-G-A-L-P-D-D-L-K-Q-G-R-L-COOH (SEQ ID NO: 14)~~

~~NH₂-S-L-Q-Y-E-K-S-G-S-F-Y-COOH (SEQ ID NO: 15)~~ and

~~NH₂-F-G-C-N-T-R-R-K-P-T-V-F-T-COOH (SEQ ID NO: 16)~~

which antibodies are bound to a carrier and ~~cross-reactively recognize several elastases~~ recognize at least one elastase iso-enzyme but which cannot recognize the amino-acid sequence Thr-Met-Val-Ala-Gly-Gly-Asp-Ile-Arg (SEQ ID NO: 1).

18. (Currently amended) Immunological test kits for diagnosis and progress check of diseases of the pancreas and of mucoviscidosis using stool or body fluids according to claim 17, wherein 2 or more different antibodies are used and the test kit is a Sandwich-ELISA test kit.

19. (Previously Presented) The procedure of claim 8 where the immunization procedure comprises coupling peptides to hemocyanin.

20-22 (cancelled)

23. (Currently amended) The diagnostic procedure of claim 1 in which ~~the pancreatic elastase is pancreatic elastase I~~ and the synthetic peptide is one or more synthetic peptide selected from the group consisting of

NH₂-A-V-K-E-G-P-E-Q-V-I-P-I-N-COOH (SEQ ID NO: 2),

NH₂-Y-T-N-G-P-L-P-D-K-L-Q-Q-A-R-COOH (SEQ ID NO: 3),

NH₂-R-S-G-C-N-G-D-S-G-G-P-L-N-COOH (SEQ ID NO: 5),

NH₂-G-P-L-N-C-P-T-E-D-G-G-W-Q-COOH SEQ ID NO: 4).

24. (Currently amended, Previously Presented as 23.) The diagnostic procedure of claim 1 in which the pancreatic elastase is ~~pancreatic elastase II or elastase III~~.